



SEQUENCE LISTING

<110> SHEN, BEN
LIU, WEN
CHRISTENSON, STEVEN D.
STANDAGE, SCOTT

<120> GENE CLUSTER FOR PRODUCTION OF THE ENEDIYNE ANTITUMOR ANTIBIOTIC
C-1027

<130> 407T-896010US

<140> US 09/478,188

<141> 2000-01-06

<150> US 60/115,434

<151> 1999-01-05

<160> 2

<170> PatentIn version 3.2

<210> 1

<211> 42000

<212> DNA

<213> Artificial

<220>

<223> cDNA

<220>

<221> CDS

<222> (11)..(658)

<400> 1

gtcgactcta	gag	gat	ccc	ggg	tgc	gga	gta	ggg	gtt	acg	gac	gaa	gga	49		
	Glu	Asp	Pro	Gly	Cys	Gly	Val	Gly	Val	Thr	Asp	Glu	Gly			
1				5						10						
ggg	gtg	ccc	ggc	gac	gcc	tgc	ggc	gaa	ggg	cgg	ttc	ctt	gag	ttc	gag	97
Gly	Val	Pro	Gly	Asp	Ala	Cys	Gly	Glu	Gly	Arg	Phe	Leu	Glu	Phe	Glu	
15					20					25						
gcc	ggt	ggc	gag	gac	gac	gtg	gtc	cgc	gtc	gag	gat	ctg	cgt	gtc	ggg	145
Ala	Gly	Gly	Glu	Asp	Asp	Val	Val	Arg	Val	Glu	Asp	Leu	Arg	Val	Gly	
30				35				40				45				
gag	cgg	ccc	agg	gcg	cag	ccc	ctc	ggt	cag	gta	cgg	ggt	gag	gcc	cct	193
Glu	Arg	Pro	Arg	Ala	Gln	Pro	Leu	Gly	Gln	Val	Arg	Gly	Glu	Ala	Pro	
			50					55				60				
gac	ggt	cac	ctc	gaa	gca	gcg	gtc	gtg	gga	ccg	ggc	gtc	gag	cgc	ctc	241
Asp	Gly	His	Leu	Glu	Ala	Ala	Val	Val	Gly	Pro	Gly	Val	Glu	Arg	Leu	
			65					70				75				
ccc	gtc	cgc	ttc	cac	aag	gac	gac	gcc	ggg	aca	gga	ctc	ccg	tgc	ggc	289

Pro	Val	Arg	Phe	His	Lys	Asp	Asp	Ala	Gly	Thr	Gly	Leu	Pro	Cys	Gly		
	80						85					90					
ctc	gac	cag	tcg	ggc	gtc	gag	gta	gtc	ctg	gaa	gat	gcg	gcg	ggg	ggc	337	
Leu	Asp	Gln	Ser	Gly	Val	Glu	Val	Val	Leu	Glu	Asp	Ala	Ala	Gly	Gly		
	95					100				105							
ggg	gcc	ctg	ttc	ggc	gaa	ctt	cca	cga	agc	cca	gcg	ccg	ggg	cca	gtc	385	
Gly	Ala	Leu	Phe	Gly	Glu	Leu	Pro	Arg	Ser	Pro	Ala	Pro	Gly	Pro	Val		
110					115					120					125		
gcg	ccg	gtc	ggc	ctc	ctg	gtt	ggc	cca	gtt	gat	gaa	gtc	gag	cac	gtc	433	
Ala	Pro	Val	Gly	Leu	Leu	Val	Gly	Pro	Val	Asp	Glu	Val	Glu	His	Val		
				130					135						140		
ctc	gcg	gaa	cac	cga	cat	cct	gcc	ggc	ctg	gat	att	gaa	gac	gtg	gtc	481	
Leu	Ala	Glu	His	Arg	His	Pro	Ala	Gly	Leu	Asp	Ile	Glu	Asp	Val	Val		
			145					150					155				
cca	ggg	gtt	gcc	gtc	acg	gtg	ata	ggc	gac	gcc	ggc	cga	gcg	gta	ggc	529	
Pro	Gly	Val	Ala	Val	Thr	Val	Ile	Gly	Asp	Ala	Gly	Arg	Ala	Val	Gly		
	160						165					170					
ggc	gcg	ccg	ctc	cag	gag	gac	gac	ttc	cag	cgg	tct	tct	cgc	gaa	atg	577	
Gly	Ala	Pro	Leu	Gln	Glu	Asp	Asp	Phe	Gln	Arg	Ser	Ser	Arg	Glu	Met		
	175					180					185						
aag	cag	gcg	tat	cgc	ggc	cgc	cgt	gcc	tgc	cag	gcc	cgc	ccc	tac	gac	625	
Lys	Gln	Ala	Tyr	Arg	Gly	Arg	Arg	Ala	Cys	Gln	Ala	Arg	Pro	Tyr	Asp		
190					195				200					205			
cag	cac	cct	ggg	gcg	cgc	acc	cgt	cat	gcc	cat	gaagcctccc	ccgctgactc				678	
Gln	His	Pro	Gly	Ala	Arg	Thr	Arg	His	Ala	His							
			210					215									
agggcggcgc	gtcgcgcgct	cccgtcggtg	tctcgcgtga	ctggaagttc	cctgacctgg											738	
cgtcaactcc	actgatccgt	aaggggatcg	cgggagtggg	tacgggtcag	gtcgtgcacg											798	
atcgtggcac	cagacagatc	accacgtcga	taggcactcg	tgagccgcgc	ccggggctcg											858	
acggggcggg	gcaccggcag	gggcggccgc	gtgatcagcc	ggagcctgtc	cgggggcggtg											918	
cgtgcggggc	gtcagctgtc	gatgtcggga	acgccagggg	cgtcgatctc	ggtgcggggc											978	
tagtggttga	agtagttggt	gtagaggttc	acggccacgt	ggacgaagac	ctcggcgagc											1038	
tcggtgtccg	tccatccctg	tgccacggcc	gcgttcacg	aggcgtcaga	cgctcgcgcc											1098	
acttcgccgg	cgatctccct	ggccacctgg	accagtgttt	cgagcttcac	gtcgtcgccg											1158	
ggcgtccccc	ggcgaatcgc	cacggctctc	tccagcgtga	aaccgcgcac	cttcgccgac											1218	
accgtgtgcg	ccgcctggca	gtacgcgcac	gcgtcgaccg	cgccacgggc	gagggcgatc											1278	
gcctcgcgtg	tgcgggcgtc	gaacgttcca	tgttcggcga	cggctccggt	gatcgcggcg											1338	

taggtttcca	ggaccacggg	ggaatgggcc	attccccgt	ggatgttgag	cactcgcccc	1398
aaccgcttct	ccagtcggcg	caggatgtct	ccgccggctg	cgggtgcggt	gtcgatggtg	1458
tggacgggaa	tccgcggcat	gggaatgcct	ctcctcgtag	tgatgggagt	tcctcgtccc	1518
tccagtctgc	ccaagcacct	cccccggtga	gctgtcccg	ccgccctccg	gccccctcta	1578
ggcaggtcgc	ccggtggtgc	ggccccagga	cgtcacctcg	ccgcaccacc	gggagccccg	1638
aggggcgagg	tcagaggccg	agcacctcct	cggccagggc	ggtgccccga	acacgggcct	1698
cgatcttggc	gaaggccagg	tcgcgtgtgg	tggaggtgtc	gtcggcgaac	ggggagaagc	1758
cgcagtcgtc	gcaggttccc	agttgctcga	cggggatgta	gcgggcggcg	agcaggatgc	1818
ggtcgcgtac	ctgctcgggg	gtctcgacca	ctgggtcgat	cgggtcggtc	accccagga	1878
agacgcgggc	ggcagggggc	aggtggtcac	ggacgatgct	caggaccgc	tcgggggtccg	1938
cttcgccggc	cagttcgaga	tagaagttgc	ccgccttgag	ctggaagagc	ttgggcagca	1998
gttcggcgta	gtcgatgtcg	aggctgtgcg	tggagtcctg	gtcgcgcccg	gggcaggtgt	2058
gtacgccgat	gcgggcgggt	tcctcggcgc	tgaagcgccc	caggacttcg	ttgttgaggg	2118
cgatgaagtc	gtcaggagcg	ccgccgctgg	ggtcgagctt	gagggacagc	cgccccctcg	2178
tgaagtcgag	ctggaccacg	tgtgcccccg	cgtccaggca	gcctcggatg	tcggcttcgg	2238
cctcgtcggc	gaggtcgcgc	aggaactgct	cgcgggggta	gccctcgatg	ggagtggcgg	2298
ggtagaggag	gctgaggggc	gaggggtcga	tgaccgcctg	cttcaggggg	cgggtccgtga	2358
gctgccgtgc	ggcgcgcaga	taggtttcgg	ccgcacctg	gtagcggaag	ggcccttggg	2418
tgatgctggg	gagctgccgg	gtgtgcccgt	ctgcgaagg	gatgacagcg	ccgtcggggc	2478
agaggggtgc	gaggccggtc	acggggtagg	tggcgaagct	cggcttgga	tgttcacctg	2538
ccacgaggac	ggggctgccg	actcgttcca	gtcgtgtcag	ggtgtccgcg	acggcctggt	2598
cctgctgttt	ggccagggtc	gtggcggtcca	gggttccttg	ggcatgcgcg	gcaagggcgt	2658
gcaggagtgt	cgcgagcg	ggaaggctgc	cgatcggctc	agtggcgatg	gtcatggccg	2718
aagagtaggg	aagaggctgg	gtttcgaacc	accgcaaagc	tttgattgcc	gctttttcag	2778
gggaagtga	tgcaagtcg	ccgagcggcg	gaacgtgctg	atgtatgggg	ggcgggagga	2838
gcctgcgggg	ttctaggagc	cggtcgcggc	cacggtggag	gaggtgccca	gctgggagcg	2898
gggggtcttt	tcgccgacgc	ggttgggctc	gatggtgcgg	gggtcgacgg	cctctccggg	2958
ggcaccttgc	cggtagacgc	cttcgggggtc	ggagtcccg	tcatggggga	gcaggaagaa	3018
gaccggcg	cggtacagac	cgctgtccgg	gtccgcttcg	gcgtcggccc	cgagttcgat	3078

gtagccgatc	atgcggccgt	cgcgggcgta	gcgcggcttg	ttcttgcgcc	ggggggtctt	3138
gtccagggcc	tggcggacgt	agtcgagtc	ctcgggatct	tcgagccaca	cgaccttcgc	3198
ctcgtgaacg	agatcgctgt	cggtcagtag	cgagctcatg	gcggcgacct	ctccttcgtc	3258
ggcgtgcacc	gggtggggaa	gcggtgcctg	cgtgatgtgt	gttcgtctgc	ggcgggtgggc	3318
cgcagtgggtg	cggaccgccc	gtggtgccgg	ttctcggcca	aagcacgggc	aggtacgtcc	3378
tggggcactc	acatcgtaga	tgggggtccgc	ttccgcaggg	cagtgcctcc	ggtcggagga	3438
cgttcattcg	tcggctgcca	gagcgagggt	ggggtagaac	ttccggccgt	tggatttgat	3498
catgtcggca	ggtgaggcga	ggcccacttc	ctggcggacc	cgggtggcga	aggcacgggc	3558
ggtccccggg	cggatgcctt	cactgtgtgc	gcaccagggtg	ctgtaggacg	tgtagagaag	3618
gccctgttcg	acgcgtagct	cgctgttctc	ggggtcgtgg	aggcagcact	cggcgaggaa	3678
gcggccgatg	tggtcctcgg	tgttcgcgta	tgcgctgggtg	gcgatgcgga	cccggtcggg	3738
gccggcgagt	gtgtcgcggg	tggcgaggta	gcggcggggc	ccttcgggtga	gccagtgcag	3798
gatccccggg	ccctcgtcct	ggacgagttc	gacagccagg	ttgtcgatct	tgcgttcgtc	3858
ggggacgatc	cgttcgaagg	gcaggaggcg	gatgcggcgc	cagaaggcga	agccgccggt	3918
ggagacctcg	gggcgggtgt	tgcccagcag	ccacagcttg	tgcgtagggg	tgaaggagaa	3978
atagtcctgc	cgcattcgcc	gggccttgat	cttgctaccg	ccggtcagca	ggcggacgcg	4038
cgcctcgtcg	aagcggtcgt	tgggccttgag	ctcgtgcac	acgatgaggc	ggcggccgtg	4098
gagttcgggtg	agctcgggtg	agtgttcgga	gtatgcgcca	cgggtccatga	ggaaaccggg	4158
cggggctgcg	tcggcgtagt	cgccgagaat	ctggatcatc	acgtcgagga	gaacggattt	4218
gccgttcttt	ccctggccgt	ggagaaaggg	cagcacctgc	gccccgacgt	caccgggtgat	4278
ggagtagccg	agaaggagggt	ggaggaagtc	gatcatctcc	cgcccttcgg	cgtcactgcc	4338
gaagggtgtct	tcgaggaaac	ggtgccagcg	gggggtgggg	atgtcctggg	gggaggcgct	4398
ggtggcgcg	gagtggaagt	cccgggtggg	gtcgggcttg	cgcatacggc	cgttgcgagg	4458
gtcgaccact	ccgtcagggg	tgacagggc	gtaggggtct	ccgtcgaggg	tgctgggatc	4518
gagggagagg	tcgggagagg	cctttgcctg	ggtgaggagc	gccttcatac	cggtcgtcga	4578
caggggtgcg	cgtttgtggt	ggtgcagttc	ccggtcgggtg	aacagcccgc	ggggatcgct	4638
gccgggcatac	tcctccgcca	tctctccggc	agcccacagg	gcagctttct	cgcctccggc	4698
ccgcttccac	cggtagccgt	cccaggagta	ccagcccagg	ccctccacgt	gccggaactg	4758

gtcacggtag agacggacga agagcttggc gttgccgcgg tcggtcaggc tggcggggaat	4818
ctcgcccgcc tcccaggcgg tcgcggcgac gggggcctcg ggagcggcct ggacagggag	4878
gagcggcgct ggggccgggg tggtttcgag ggccagcatc tgctgagcgg cggcagttgc	4938
gtcaaagcga gggccctcgg cgctgctgct catggacgtc cttcgagatg gagcggtcgg	4998
gcggtccccg ctgcgggaac ggcatgaatg atcttccccg tcgggacaga gtgccagggg	5058
cagcgcattgt gcggggggac aacggcccgt ttcggacgag ggccggccga cggggggaag	5118
caggggcccg caaccgggtg gcggggcggc gtgagcgagg gcacgagcgg cccggtacgg	5178
ggggaagggc tcgtctctcc gtggggcggc acgttgttgt cctcgtccgt cagcttgctt	5238
ctggcttcag cctcctgacc cccaataagg cgaaagctgc tggtaagca tctttcgtga	5298
cactcggcga gggactgaag ggactgtctt tcggaatgag tgtagggggg tgtcgggtgg	5358
ggaccgcgcc tcgactcccc ggccggacggg atctgttcgg tcggtccctt gggtcctcc	5418
ccggatcgcg gcagggaccc aagggggcgg tcgggcgggc ggtcgggtgag gggccccggt	5478
ggagggactg aggggtctgta tggagcgata agaggggtctg aaggggcgga gagagtctcg	5538
gtccctgcgt tgagtccttg gtcattaccg caggtcagag gggttttgag gggtgaaaaa	5598
gggactgaag ggactcaact tccccattat gagctgagta gaagaaagca gtatgacgat	5658
atcgggcgct acatacgcg gcgtacatag tgagcttata atgcggaagt tgagtccttt	5718
cagtcctttt tcgtggggtc gtatccctc tgactgcgtt gaccgtcgcc gctccgcga	5778
gggaccgaag agggaccaag tccctgcgcg gggcgggcga cggtaatcgt gcagtcccc	5838
ctccccggtt tcccacagcg agtcgtcgct cccctgtgag gccggagagg gtcctagaac	5898
ccctcagggg ccgttctgtg gccctctggg cctcctcctg gccatttacc ccatgggggc	5958
gcttgggggc gtcaggaggg cttgtgaggg ctctgccggg aagtggcgga ttgcgcatgg	6018
caggagatgc cccgacagcg gccgggaatc gacgatgtcc cccgaccct atccagcgtc	6078
cgctgaccc caggaggcag accttgacgg ctccagaagc gaagaacggc cgggtccccg	6138
agcagccgca ggaagagcgg atcgtcctgg acgtatggct ggcgaactac ccgttcccc	6198
cctatgacgg gcgtgacttc ctcgctccgc tgccgcgagc ggccggcgag ttcgagcgcg	6258
cccacccccg ataccgggtc gacatcaacg gccacgactt ctggaccatc cccgagaagg	6318
tggcgcgcg caccgcggag ggcaggcctc cgcacatagc gggctactac gccaccgaca	6378
gccagttggc gcgggacgcg cgcaggcccc acgggaagcc ggtcttcacc tcggtggagg	6438

ccgcgttggc	cggccggacg	gagatactgg	gacacccggt	ggtggtggag	gacctcgacc	6498
ccgtggtgcg	cgactcctac	tcgttcgggg	gcgagttggt	gtcgctgccg	ctcacggtca	6558
ccaccatgct	ctgctacgcc	aactcctccc	tctcgcgcg	cgccggtggt	ccggagttgc	6618
cccgtacctg	ggatgaggtc	gaagcagcct	gccaggcggg	ggccagcgtc	gacggggggc	6678
ccggtcacgg	aatcacctgg	gccaacgacg	gctgggtttt	ccagcaggcc	gtcgcccttc	6738
agaacggggg	gctgaccgat	caggacaacg	gccgctccgg	ctccgccacg	acggtggacg	6798
tcacatcgga	cgagatgctg	gactgggtcc	gctggtggac	gcacctccat	gagcgcgggc	6858
attacctcta	cacggggcgg	ccctcggact	ggggcggggc	gttcgaggct	ttcgtccagc	6918
agaaggtcgc	attcaccttc	gactcgtcca	aggccgcccc	ggaactcatc	caggccggtg	6978
cacaggccgg	tttcgaggtc	gcggtgttcc	cgttgccag	gaacgcgaag	gccccggtag	7038
cgggccagcc	cgtctcggga	gactccctgt	ggctggccgc	gggactcgac	gagaccacgc	7098
aggacgggct	gctcgctctc	accagttacc	tgatcagccc	ggccaacgcc	gcggactggc	7158
accgcaccaa	cggtttcgta	ccggtgaccg	gcgcggccgg	ggaactgctg	gaagcgacag	7218
gctggttcga	ccgccggccg	cagcaacggg	tggccgggga	gcagttgaag	gcgtccgacc	7278
ggtcaccggc	ggcgctcggc	gcgctgctcg	gcgacttcgc	ggccgtcaac	gaggtcatca	7338
ccgcagcgat	ggacgatgtc	ctgcgcagtg	gagcggaccc	cgcgaaggcc	ttcgccgaag	7398
ccggcggtgg	cgcccagcaa	ctgctcgatg	cctacaacgc	ccggaaccgc	tccggatccg	7458
ggacccccct	cgccgtctga	gatccggtac	cggggcacag	gggcgccgcc	gcccgttttc	7518
ccggcggggc	actggccggg	ggacatgctc	tcccgcctcc	ggcaggacgt	aggggtcaacc	7578
cgctcgccgc	ttcaggtggc	ggcgagata	ctcaccggtc	agggaggaat	ccgcggcgag	7638
caggtccttc	ggtgtgccgg	tgaagacgat	ctcgccgccc	tcccgtcccc	cgtcgggacc	7698
caggtcgatg	atccagtcgg	cctgctgcac	cacatcgagg	ttgtgctcga	tgaccacgac	7758
ggtgttcccc	gcctcgacga	gcccgtccag	gagcttcagc	aggggtgtcaa	cgtcgcacat	7818
gtgcagcccc	gtggtgggct	cgtccaggac	atagaccgtg	cccgtgcggt	gcagctggtc	7878
ggcaagtttg	atccgctgca	gttcaccgcc	ggagaggctg	gaaagcggct	ggcccaggct	7938
gaggtacca	agaccgacgt	cgacgagagc	gcgcagtttc	ggcagcaggg	ccttctcggt	7998
gaagaactcg	acggcctcgt	cggcgggcag	ctccaggacg	tccgcgatcg	acttcccgcg	8058
aagctggtgc	tccaggacct	cgggcttgaa	gcggcgcccc	tcacagacac	cgcagtgcgt	8118

ggtcaccgga	tccatgaagg	ccagctcggg	gatgatgacc	ccgcggccct	ggcactcctc	8178
gcacgacccc	ttggagttga	agctgaacag	cgaggcggtc	gcgccgggtc	ccttcgcgaa	8238
cagcttgccg	agcgggtcca	tcaggccgag	gtaggagacc	ggtgtggagc	gcgacgaggc	8298
ggcgatcgcg	gactggtcga	caaagaccgc	gtcgggggtg	gcctccatga	atgccccgga	8358
gatcaggctg	ctcttgccgg	aaccgcgcc	cccggtcacc	gcggtcagca	caccgggtggg	8418
cacggccacg	gagacctgct	tcagggttg	gagatccgcg	ttctccacgg	tcagctcccc	8478
cgtgggcggg	cggacctcct	ccttcacgcg	ggccccccgc	cgcagagcct	ccccgggtccg	8538
ggtcttcgcc	ttccgcagct	tcgcgaagga	cccctcgaac	acgatctcgc	ccccgtgcac	8598
tccccccccg	ggaccgacat	cgacgatgtg	gtcggcgatc	tcgatcacat	cgggggtcgtg	8658
ctcgacgacc	agcacggtgt	tccccttg	gcgcagcgcg	cgcagcaggt	cgttgagccg	8718
ccccacgtcg	cgcggggtga	ggccgatgct	gggctcgtcg	aagatgtacg	tgagcccggc	8778
cagaccactg	ccgaggtggc	gcaccatctt	cagccgctgc	ccctcgcccc	ccgagaggtc	8838
ggcgtggggc	ctgtccaggg	tcaggtagcc	gagcccgatg	gacacgatcc	gctccagggc	8898
cgtgcgcgcg	gcttttcgga	gaggggcagc	ggccgggtcc	gtgacgccgg	cgagcacctc	8958
cgtgaggtcg	cggacctcca	tgctcgagta	gtcggcgatg	ttcttgccgt	cgatccggac	9018
gtcgagcgcg	gcggcggtga	gccgcgcgcc	ccggcaggag	ggacagactc	cgtcgggtgac	9078
gaaacgttcg	atgacctcgc	gcttgcggtc	gctcagcgcg	ctgaggtcgc	gcttgagggt	9138
gagccgctcg	aaccggtcgg	ccaaccctc	gtagttcgtc	tggaactcgg	tgctcttggt	9198
cttcagcgtc	accttcccgc	cggtgccgcg	cagcagcggt	tccagctcct	cggcgctgta	9258
ctcggcgatc	ggcttgggcc	gatccagacg	gccggacttc	gccagatct	gccagtccgg	9318
gctaccacc	ttgtactcgg	ggaaaaggac	cgccccgtcg	tccagggact	tcgagcggtc	9378
cagcatcttg	tccaggtcga	gggcgatgct	ctggccgaga	ccgtcgcagt	ccgggcacat	9438
gccctggggg	tcgttgaacg	agaacgcgga	gacgccgagc	gaggacggcc	cgtcgtcctt	9498
cgtcgtgccg	aaccgtgcga	acagggcccc	gatcatcggc	tgtacgtccg	tcatgggtccc	9558
caccgtggac	cgggcgttgc	ccccacggg	cttctgggtc	acgatcaccg	gggtgggtgag	9618
gttctcgatc	gcctcggcct	gaggacgttc	gtacttcgga	agctgggttc	ggatgtacca	9678
gctgaagggtg	gagttcagct	gtcgttgggc	ctccacggcc	accgtgtcga	agacgatcga	9738
cgacttgccc	gaacccgaga	cccccgta	gaccgtgatc	tggttgccgg	gaatcgtcag	9798
ggagacatct	ttgaggttgt	ggatccgcgc	gcccgcgatg	cggatgccgt	ctccccggcc	9858

ggatgttttt	cccgcgccgg	cggtgggggc	ggtgacgctc	acagagtttt	cctcctggct	9918
tccgtacatg	atttaccgtg	tcagccgggc	aaaccggcgg	aacggtaacc	acctagcttg	9978
tactcaggag	gtgtccgggg	tcttctcttc	ccgtgctgac	ttggggggccg	gcccggccgga	10038
cagggccggc	tccgtgttcc	accccgccag	ccgatcccc	cgctccgtct	cgctctcttc	10098
gagaacgatc	cggtctctcg	cccagcgcag	gatcggcggc	gccgtcaccg	aggtgatgag	10158
ggcgaccagc	acgatgatcg	tgaaggtcac	ggtgtccagt	acgccgatac	gcaggccgac	10218
cagggcgatc	accacctcga	tcattccacg	cgagttcatc	cccgtctcga	gcgccagccc	10278
ctcgtagcgg	ctcatccgc	cactacgggc	ggcgacgtac	gcaccggcga	acttgccgaa	10338
agtggccacc	aacagcacc	cgaggcccgt	gagcagcacc	gacggctccg	cgagtgcggg	10398
caggtccatg	cgaagcccca	cactgcccag	gaacaccggg	gcgaacacgg	ccatgaccag	10458
cgtgcgcagc	ggggcgagcc	gtaccggggc	gatgtgcctc	agcagggtcg	caccggccac	10518
gaacgccccg	aacaacgcct	ccatcccggc	cgccgcgggc	agcgccccgt	acaggacgac	10578
cacggccacg	ccgacggtga	cggccgatac	ggggaccggg	ctgtcaccgg	tacgggacag	10638
ccgcttgccg	atcgggccgc	ccaccgcaca	cgccgcggcg	acgaagacgg	tcgtccaggc	10698
catcgtggtc	aggaccacgg	gccccccggc	cgccccactc	gccagcgccg	tcaccagagc	10758
gagcagcagc	cagcccaccg	cgctcgtcgaa	caccgctgcc	gcgatgagca	gctggccgac	10818
gttgcggtgc	gtcagattca	ggtcggcgag	cgctcttggc	atcaccggga	gggccgtgac	10878
acacatcgcg	accccgagga	acagcgcgaa	gacgccccgc	tctccggagt	ccgcgagcag	10938
cgaggcgggc	accaggtagc	cggtggcgat	gcccagcccc	agaggaatca	gaagaccggc	10998
caggctgacc	cgggcgggca	gacccccgcg	cttgcgcagg	atccgggggt	cgaactgggc	11058
acctgcgatg	gccaccagca	gaaggacgcc	gaactggcag	aacgcgtcga	gcagggtgcgc	11118
ctgcgagatg	tcctcgggaa	acagcctgcc	ggaaagtccc	ggcgagatct	gccccagcag	11178
ggtcggcccc	agcagtaccc	ccgcggtcag	ctccccacc	agcggcggca	gaccgatccg	11238
ggtccccagc	cgtcccagac	cgtaggcaca	ggcgagcagg	aggccgacct	ggagcaggaa	11298
gaccgtcagc	ggctccccgc	ccagcggcga	cgtggctgcg	agcacagcca	cgtcaggacc	11358
gcgcaccggg	aaccagccc	agcccgtccg	tcgacgcggc	cagaccccc	tgcttcaccg	11418
gtcgtctggc	ccccgctca	tccccagaa	gagcccgtgc	ctgcagtgcg	gcgctctgct	11478
ccatgaggcg	gccaccacc	tttcccggca	cggcgccgtg	cggcccgtcg	gcgtcgcccc	11538

cagcgggtgtg	cgatcatgccg	gccatctcgt	cggacgcctc	ggagaaccgc	tgcttgcccc	11598
gggccgtgtc	ggcgaactcg	tcggaggaga	ccccgccgat	cagttcgacg	aaggactgca	11658
ggtcggagtc	cgcggtgttg	gagatcttcc	gggcctgcc	gaaataggag	tcctccgaat	11718
ggtgcatgtc	gtagaagccg	accaggaact	cgtagaagcg	gccgtactcc	agccggtagc	11778
gggcctcgaa	ctcctcgaa	gcgctgggtc	cgtcgaccga	cccgtccagg	caggagttga	11838
gcgagcgcg	tgccagcagt	ccgctgtagg	tggcgaggtg	caccccgag	gagaacaccg	11898
ggtcgacgaa	gcacgcggca	tccccgacca	gggccatgcc	cggcgcccag	aacttcgtgt	11958
tgctgtacga	ccagtccttg	cggaccggga	gctcgccgta	ggggccctcg	gtcaccgggg	12018
tggcctcgga	gagcttctcc	gcgatcagcg	ggcaggccgc	gatgaacgac	tccatcgctt	12078
tctcggggtc	gccctgcacc	aggctcgccg	agtcccggtt	caccactgcg	ccgacactcg	12138
tcagctcggg	agacaggggt	atgtaccaga	accaccctg	ctcgaagggt	caggtgaaga	12198
tgttccccga	gttcggcttc	ggaagccgct	tgccgccggt	gaagtagccg	aacagggcca	12258
ggttgccgaa	gaagggcgag	tactcgcgct	tggcgcccga	cttcttgtag	agcccaccgg	12318
tgttgccgga	ggcgtccacg	acgaaacggg	agcccacctc	gtgctcgcg	ccctcggagt	12378
cccggtagcg	cacgccccgc	accgggccgt	cctcggcctt	gagcacgtcg	aggacatcg	12438
tgttctcccc	cacctcgaca	ccgtgcctgc	gagcgttggt	gagcaggatc	tggtcgaact	12498
tcatgcgctc	gacctggtac	gcgtaccccg	tcgcccccg	catccggcgc	gagacggcga	12558
agtcgaacgt	ccacggttcg	gggttgccac	cccacttgaa	cgtcccgccg	tgcttgatcg	12618
tgaaggctgc	cttcttcagc	tcgtcggaga	caccgaggag	gtgtgcgatg	ccgtggacgg	12678
tggaggggag	gagcgactca	ccgatctggt	agcgcgggaa	ggtctccttc	tccagctgga	12738
gtacgcgatg	gccccgcttg	cggaccagcg	tggagacggt	cgagcccgcc	ggacctccgc	12798
cgaccacgat	gacgtcgtag	tgcgctgaca	cgtccacgga	ctctccttct	cgcacatcgg	12858
gcgtctcata	ttcccaggaa	tcctctggcc	cgcccagggt	ctgccgcata	ttcgggtattg	12918
cgaagtcgtg	ggcattctgc	gagaagcatg	aaccgcgtgg	cccggctctac	agtggcggtg	12978
aatttcagtg	attgcgctga	agggcggcac	acgatgaagg	cacttgtagt	gtcgggtggt	13038
tcggggaccc	gcctgcgccc	gatcagttac	gccatgccga	agcagctcgt	tccgatcgcc	13098
gggaagccag	tccttgaaata	tgttctggat	aatatccgga	acctcgatat	caaagagggtc	13158
gccattgtcg	tcgggtgactg	ggctcaggaa	attattgagg	caatgggtga	cggcagccgt	13218

ttcggtctgc	gcctcaccta	catacgccag	gagcaacctc	tgggcatcgc	gcactgcgtg	13278
aaactggccc	gagacttcct	cgacgaggac	gacttcgtcc	tctacctagg	cgacatcatg	13338
ctggacggag	acctgtccgc	gcaggcgggg	cacttctctc	acaccgccc	cgccgcgcgg	13398
atcgtcgtgc	gccagggtgc	cgacccccgg	gccttcgggg	tgatcgagct	ggacggcgaa	13458
gggcgtgtgc	tgcgcttgg	cgagaaaccc	cgtgaaccgc	gcagcgacct	cgcggcggtc	13518
ggcgtgtact	tcttcaccgc	ggacgtgcac	cgcgccgtcg	acgcgattag	cccagaccga	13578
cggggcgagc	tggaaatcac	cgacgccatc	cagtgggtgc	tggagcaggg	cctgccggtc	13638
gaggccggcc	gctacacgga	ctactggaag	gacaccggcc	gggtcgagga	cgtcgtggag	13698
tgcaaccggc	ggatgctcgg	ccgtctggcg	ctccagggtg	cgggcgaggt	ggacccgga	13758
agcgaactgg	tgggtgcggt	ggtcgtcgag	gagggcgccc	gggtgacgcg	ttcgcgggtc	13818
gtgggaccag	cggtgatcgg	cgcgggcacg	gtcgtcgagg	acagccagat	cggaccgtac	13878
gcctccatcg	gccggcgctg	caccgtgcgg	gcgtcccggc	tctccgactc	catcgtcctt	13938
gacgacgcct	cgatcctcgc	ggtgagcgga	ctgcacggct	cgctgatcgg	aagggcgcg	13998
cggatcgcg	ccggggcccc	gggcgaggcc	cggcaccggc	tggtcgtcgg	cgaccacgtg	14058
cagatcgaga	tcgcggcctg	acgcaccac	cggagcaccg	gggggaggct	cggcaggggc	14118
gtcaggccgt	aagaagggt	gccggggcgg	gacggaccgc	ccccggcagc	ccacaggtcc	14178
ccggtccgcg	gatatggggg	actcgagggt	cgatcagccg	aaggtcagag	ccacgtggcc	14238
gaggtcgagc	ccggagttgc	cggcgccgag	gttacaggcg	gccgtggcgc	agtcgacgct	14298
gccgaccggc	gtgccttcgg	gcgtggagcc	cgtgtacgac	ttgcgcacga	cgaagctgaa	14358
cgacgccgct	ccggacgcgt	ccgtggtgaa	ggacgtcgcg	gtcgccgggt	tgcacgcgtc	14418
ctggccaccg	accggagcgc	actgggcgat	gtagtaggtc	tcgccggcgg	cggcaccgct	14478
gaccgacacc	gacacgctct	gtccgtcact	cagacccgag	gcgggactga	cggagaaggc	14538
gggcgcggcg	aaggcgacgg	actgtgcggc	ggcgccagg	ccgatggatg	cgacggccac	14598
gacgccgaac	ctggaagcac	ggcgggacat	gtgacgtaac	gacatgcgta	ggctccgatt	14658
cgaggagggg	gttgatcact	ccatgaaagg	atcacctcgc	cggacggccg	cctgcatctc	14718
cctctgtgct	ctcgtggatt	tccggcacgg	cactcccgtc	gacggccgcc	cgcagaatgc	14778
ggcagacccc	ccgcacctcc	tccggcccca	ccgccgtacc	ggtgggcagc	gacagcaccc	14838
gctcggtgag	cgctccacc	ttcgggagcg	gatcgggcgc	gtggcgcgcg	aggtcggacc	14898
ggtagggctc	gcagctgtgg	cagccggggc	tgaagtaggc	gcgggccagg	acgttgtgcc	14958

gttggagcac	cgcctggagt	tcgtcgcggt	gcagcccggc	gcggacggcg	tccacctcga	15018
tgacgacgta	ctggcagttc	gacagctcgt	tcggatcctg	cgggcggacc	cggacgccgg	15078
gcagtccgtc	gaggtactgc	tcgtacagac	ggtagttgcg	ccggttgatc	gcggtgaagt	15138
gatcggcgga	ctccagggag	gtgaggccca	tggccgcgct	gatctcgtgc	atccgcgcga	15198
ccgttccgct	cccggtgatc	tcatgcgcgg	cgttgagccc	ctggtggcgc	atggcccgga	15258
gccggtcggc	cagggcgtcg	tcgtcgggtga	cgatcgcccc	gccctcgaag	ctgttcacga	15318
acttcgtcgc	ctggaagctg	aagatctccg	ccgtgccgaa	gccgccgatc	ggcttcgacc	15378
ggtaggtgca	gccgaaggcg	tgggcggcat	cgaagagcag	gtgcagcccg	tgctcggcgg	15438
ccagcttggt	cagctcgtcg	atccggggccg	gtctgccgaa	gacgtgcacg	tccaggatgg	15498
cgcggttacg	cgggccgatg	agccgctcca	cgtgtgccac	gtccgcgggt	ccggtctcct	15558
cgtccagttc	gcagaagaca	ggcaccgcac	cgatccagtc	cagtgcgtgg	gcggtggcga	15618
cccaggtgaa	ggagggcacg	atcacctcgt	ccccaggacc	gatgcccagg	gccttcgcgg	15678
cgacctggat	gccggtggtg	gcgttcgata	cggcgacgca	gtgcctgacc	tgggtcagct	15738
cggccacacg	ggcctcgaac	tcccggacca	gggggccgtc	attggtgaac	cacaggcgct	15798
ccagcgcccc	gtcgatccgt	tccatcaaac	ggtcgcggga	gcccacgttc	gggcgtccca	15858
cgtgcagcgg	ttcgctgaag	tagggcgtgg	gtagggagtc	cagacgcacc	gggccgccgc	15918
tcatgccgtg	cgcacgccga	cgaagaggcc	ggggctgttg	ggccggccgt	cggccagccg	15978
gaagccgggc	acgaaccgca	ccgagagccc	caccgattcg	aaggcgtcgg	tgtactgctc	16038
gcgggtgaag	aggctggagg	tcaggacctc	ggagaactct	ctgaagccgg	aggcgctccg	16098
gacccggaac	cggacctcca	gacgtgactt	gtcgccctgg	cgcacggagt	gcgtcatccg	16158
cgtgatgaca	cggccctcct	cctggtgcag	atggccgccg	acatgcccg	cgaggaagtt	16218
ctcggggaaa	taccaggggt	cggcgacgag	gactcccccg	gggttcaggt	ggtgggcat	16278
ggccgacacc	gcggccttga	gctcggtgac	ggaccccatc	tcgccgagcg	cgttgcccat	16338
gcaggtgatc	gcgtcgaagg	tgccggcccag	gtcgaacgaa	cgcattgtcac	cggcgtgcag	16398
cgggacgccg	ggaagccggc	ccgccgcctg	ctccagcatc	gcgggcgcg	actcgaggcc	16458
ctccacatgg	ccgaagagcg	tggcgagcgt	ctccagatgg	gctccgggtg	cgcaggcgac	16518
gtccaggagc	gacacggcgt	cggggcgggc	ggcgaggatc	agctcgggtga	gcccgcgggc	16578
ctccaggtcg	aagtccttgc	cgcggctgcg	gaacacgagg	tcgtagaact	tcgcgtgctc	16638

gggggccgtac tccatcagac gagctccttc gcagactggg cggagatgat tctgggctcc 16698
 gggatgggaa cgatgaactt ccctcccgcc tccaggaagc ggcgctcctt gcggacgacc 16758
 tcgtcgggtgt agttccaggc gaggaggagg tagtagtccg gctcgggtggc agcgacctcc 16818
 tccggaggaa ggaccgggat gcggttcccc ggcagcagtt tgccgtgctt gaggctggtg 16878
 gtgtcgcgc agacggtgat gtcctgatcc gtcagaccgc aggccatcag caactgggtc 16938
 cccttgagc gtgctccgta gccggccacg cgggtggccgt ccgcggccag accgcgaacg 16998
 agcgtacgga tcgcttcggt cacgcgcgtc acccgctcgg cgaacgcccg gtagggggca 17058
 tccgtcagca gtccgcgctc ctctccagg ccgagcagcg ccgcgaccga gggctccggg 17118
 acccgctcgg ccgactcgcg cgcggcgacg accgcgatcg aaccgccgtg cacggcgacc 17178
 cgctccacgt cgatgatccg caggccgtgc gcgccgaaga ggtggcgag tgtgtgcagg 17238
 gagaagtacg acaggtgctc gtggtagatc gtgtcgaact ggttctcgtc gagcaggttc 17298
 agcaggtacg gcacctcgat gaccaggacg ccgtcgtcgt cgagcactgc gtcgacgccg 17358
 tccaggatgc ggtgcacgtc gtcgatgtgc gcgaagcact ggccggccgat gacggccttg 17418
 gccctgccct gctcaagggc gatgcggccc gcgggctccg ggccgaagaa gtccgggtcc 17478
 gtggggatcc cccgggctt ggcgatctcg gcgaggttg ccgccgggtc gaccccgcc 17538
 acccgcatgc ccgccccc gaacatcgcg agctgggtgc cgacgttgct gccagctcc 17598
 acgaccaggt cgccggaggc gaggcttgcc cggcgggtcg ccagcccgac gatgtgcgcc 17658
 atgtgctcgc ggatctggtc ggagtcggag gagacgtaga cgtagtgctt gaacagtgtc 17718
 cgggggtcga cgacatggcg aagcgtcatc agccggcacg accggcacac gatgacgtcg 17778
 agcgggaaga cgtctcgc ctcatcgcg tcggccggat cgacgaacct gttggccagc 17838
 ggcagcgagc cgaaggagat cacctcggtc cagtcgtccg caccgcatc acggcacgtc 17898
 tcgtcccgcc tgcatttctc cagcatgaag tctctgacg gcgaatgccg acgcatcggg 17958
 cccgtcggtc cggggacggt caatctaggg ttccggccga cgggcgctcc acttcgtatg 18018
 tgccctactg gttcagcgga gcggacgggt gaacgcccg acgtcctcga tgaggagctg 18078
 cggctgctcc atggccgcga agtgcccgcc gcggtcgaac tcggtccacc gcgtcaggg 18138
 cggcaggatg ccctcggcga acgaccgat cggccgggtg gcgtcgtccg ggaacaccgc 18198
 gacgccgacg ggggcccgtca gcggccaggg cccgcccag gtgcgggcga agtccgccat 18258
 gccgcgagcc gactcgtagt acaactgagc gctggaaccg gccgtcgcgg tcagccagta 18318

gatcatcacg	tgggtgagca	gccgggtccc	ggagatggcc	tcctccacgt	tcttgccgcc	18378
gctccactcc	tggaacttgt	cgagaatcca	ggcgagctgg	ccgaccgggg	agtcgggtgag	18438
gccgtaggcc	agggctctgcg	ggcgggtggc	ctggatgcgc	tgccagccga	tgccgggtgtc	18498
ggcgaactcc	ccgctgtgcg	ccagcttgcc	caggtcgcgc	tcgtccaggc	gcccgatggc	18558
ctccggggcg	tcctggggcg	ggaaggtcac	cagcatgttc	aggtggacgc	cggccacgtg	18618
ctcgggggtcg	gccagcccca	gctccagcga	gacgaccttt	ccccagtcgc	cgccctgggc	18678
gacgtaacgc	tcgtagccga	ggcgggttcat	cagctccgcc	caggcgcggtg	cgatccgccg	18738
cacgtcccag	cccggctcgg	cagtcggggc	ggagaagccg	tagcccggca	tggaggggac	18798
gacgacgtgg	aaggcgtccg	ccgggtcgcc	gccgtgcgcg	cgcggggtcgc	tcagcggccc	18858
gatgacgtcg	aggaactcgg	cgaccgagcc	cggccagccg	tgggtgagga	tcagcgggat	18918
cgcgtcgggc	tcgggcgaac	gcacgtgaag	gaagtgcacg	tcggcgccgt	cgatcgtggt	18978
gacgaactgg	gggaacgcgt	tcagctcggc	ctccgcggca	cgccagtcgt	agccgtggcg	19038
ccagtggtcg	gtgagctcct	tgaggtagga	cagcggcact	ccgcgggtccc	atccggatcc	19098
gggtatctcg	gacggccacc	gggtcgcgtc	gatccgcggg	gttaagggtcg	tcgaatgtcg	19158
gactgggtcg	atctcgatac	ggaagggacg	cacagtgaat	ccaccctcgt	gattgtggga	19218
gccccggcggc	gcgaggcggc	cgccccgatg	tgatccgggg	accgtgtctc	aggccgggttc	19278
ggccggcgcg	gccgcgcctt	cccgtgcgga	gaaggaccgc	acggaggaca	ggaagttgcg	19338
gatcatcggc	atgccgtggt	cgggtccgga	gctctccgga	tggaactgga	cggactccac	19398
cggcagcgaa	cgggtggcgca	ggcccatcac	gtaccgcgtc	tcctgtggagc	gcccgggtgac	19458
ctcgagggac	ggcgggaccg	tgccctccgg	cacgatcagt	gagtggtagc	gggtcgcgaa	19518
gaaccccgcg	ggcagcccgg	tgaacactcc	gcgcccgtcg	tgcgtgatcc	ggctcgtctt	19578
cccgtgcatg	agatgccggg	cggggacggg	ggcggcgccg	taggcgcggg	cgacggcctg	19638
atgccccaga	cagaccccgga	gcagcgggac	ccggccggcg	aaggcctgga	cgatctcgac	19698
gtgcccggag	gtgtcggggg	ggcggggggc	cggccccagc	aggaccgcgt	ccggccgcat	19758
cagccccatc	tcgtccgggg	tcatgagatg	cgaccgcacc	atgacgggct	ccgcgcgggc	19818
ggacatcaga	tactggcgca	ggatgtcgac	gaagctgtcg	aacgcgtcga	ccaccaggac	19878
ccgcgggggc	tcgggtgctg	cgccggatcc	gtcgggagac	cacaagctca	cagcaactcc	19938
tctccgggtga	ccgcccagtg	agtggcgctc	atcttggcca	gcgtctcggt	ccactccgcc	19998

cccggttcgg	aatcggcgac	gattccggcc	gaggcccggg	tgcggtagac	gccctcgtgg	20058
tggaaaaggg	tccggatgca	cagcgcgagg	ttggtgtacc	cgcccacgtc	gaggaggccg	20118
agcgccccgg	cgtacaggcc	gcggcggctg	cgttcgacgg	actcgatgat	ctccatggcg	20178
cggatcttcg	gcgcgcccgt	catggtgccc	gcggggaaca	gggcggcgat	ggtgtcgaag	20238
gcatcggtgt	ccaccgcgc	ccggccgacg	accgtggaga	ccaggtgcag	cacgtgggag	20298
tagccctcca	cgtccagctg	gtcgggtacg	tcgagcgtgt	tcggccgggc	gatccgtccg	20358
atgtcgttgc	ggcagaggtc	caccagcatg	gtgtgctcgg	cgatctcctt	gggatccgac	20418
ctcagccgga	ctcccgggc	gatgccgcg	tccgcgccgg	accgcggcac	cgtgcccgcg	20478
atcggccgca	tcgtgacctc	gccgtcctcg	atgcgtacga	acagctcggg	gctggcgccg	20538
atcagacggt	gcccgtcgat	gcccgcaga	tacatgtacg	gggaggcggt	ccgccgcgc	20598
aggcgctggt	agacgtccgc	ggggtcggcc	gtcgagcgga	tggagagctc	gtgaccgatc	20658
tgcacctggt	agatgtcgcc	gacggcgatg	tgcttcagac	accgctcgac	gtcgttcgcg	20718
aacacttcgg	gggcgctgtc	gtcggtgacc	gcggaggcgg	ggaagccgtc	tgcggaaggga	20778
tcggggccagg	cctgctccac	gtcggcgagg	agcccgggtga	cggctctccg	cgcgaggccg	20838
ggccagtagc	gggactcgtg	gagcagcagt	tcgcatcggc	cgggtggcgag	atcggtgacc	20898
acgctgcccc	ggtgcaggac	catgcgtacg	tccggcaggc	caggccgggt	ctcgatgagg	20958
tggggcagggt	cctcgatgta	gcggggccgtg	tcgtacccca	agaacccgag	gaacccgaag	21018
cgggaagccgg	acgcggaccc	ctcggcgctc	aacatgtccc	gcatggcccc	cagcagcggc	21078
cacaacccgc	ccgcgggtacg	cagccgcagc	ccctggggggc	cgctcctccag	gagcgcgccg	21138
gcccgtcca	ggagcaggcc	ccgcagggcg	ggtacgccct	cgacgcgcac	caccgggtcg	21198
gtgaccgaga	gcgagagcag	cgcgccgaag	ccgacgaact	ggtgcctgcg	gtcgcggggc	21258
gggcccggcc	cggactccag	gaggtagacc	tcgtcggggc	cgaagtgtc	ggccagcgcg	21318
cggtaggcgg	gcagggcgcc	cgtctccttc	acatcgaggc	gtcgtgtccg	caccgcacc	21378
ggggccgaga	ccacgcactg	gtcggtcatc	ctgggtcctc	ccggatcacg	tggtgatggc	21438
gtagcggtgt	gccacctgac	gggcggtcag	caccgcccgg	tcggggccgg	agcggttgtc	21498
gacgacgcgc	gcggccttcc	agctgacgaa	ggagccgggtg	tgggtcacgg	ggtcgaggtc	21558
ggtgtccacg	acgatgccgg	cgtgcgcgcc	ggtccgctcc	ctgagccggg	cggcgacggc	21618
ctcgccgatg	ccctgccgtt	ccccctcggc	gccggccagc	aggtccatgc	gcacgggtgac	21678
ggcgtcgctg	ccgtcgtcct	gccggtcgat	gacgacctgg	tagccgaggc	agccgccgac	21738

cccgtcgagg	atcgcggcct	ccagctcggc	gggctggagg	gtcacgtcgc	ccagggggat	21798
gcggtccgcg	acccggccga	tgacctggat	ccgcgggtccc	ggcagcggct	ccccggggcc	21858
cgccgggagg	atgcggacca	ggtccccggt	gcggtagcgg	atcagtgggt	tgatgccgtc	21918
caccagcatg	gtgaggacga	gttcgccctc	tcccgtgtcg	ccgaccacgg	cgccgggtgtc	21978
cggttcgacg	agttcgggtca	agtagttggg	ctgggcgagg	tggagcgtc	cgggtgtccgc	22038
tccggtggcg	atgcacaggg	cttcctggga	gccgtagagc	gtgggcccga	cgacggcttg	22098
cggccagagg	gtcgccacgt	tgtcggcgaa	ctgcgggggtg	cagatctcac	ccagcgtgag	22158
gaagagcttc	acgggaagcc	gggccaggtc	gtagccgtag	tgcagggccg	ccttggaag	22218
gctcaggcac	agcgccggag	cacagacgac	gacctcgacc	tccagctcct	cgatcagccg	22278
cagcgcctta	cggaatccca	ccctggggga	ctcggggccag	atcttgacgt	gacaggcccc	22338
cagctccgct	gccaccgcgg	tgaacacgtc	cccgaacgcg	tacagctccg	acggccccat	22398
caggcccacg	acgggcatcc	gccccccgaa	cctcgccttc	agcatgcggc	gccaggactc	22458
ccggacggcg	atgttgctgg	tcgcgatgtc	cttctcgccg	cgtgggcacg	gggtggccgc	22518
cccggtggtc	ccggtggtct	cgtagtagat	gcgtgcttcg	tgcagcgggc	ccgacaggac	22578
gtcgtgcac	tcccgcgcga	ggtcgtcctt	ggtggtgaag	ggcaggtccg	ccaggttcgc	22638
gggggtgacg	gcctcgacgt	ccacgcctgc	cagatggcgg	cggtagaacg	gcgagcggcg	22698
ggtgacgtgg	cgcagtacgg	ccgtcagccg	ttcgccctcc	cagcgtcgc	ggtcggcggc	22758
ggtgagttcg	ccgcggtaga	acgcgtcgct	cacctgcccg	taggcggacc	agaactcgct	22818
gtccgcgtcg	gggtccagcg	gcccgggtccc	gccgggaccg	ggccgcgggc	cgtctctcac	22878
ggctgtgcct	ggagttcggt	gagcgcgagg	ccgaccgcgt	cgttgacctc	gttgagggcc	22938
agcacgtccg	aacggccggt	gagccgacgg	tgttcgtcga	gcagttcgat	catgtccgtc	22998
atcctctcga	ccaggcgcga	gacgttggtg	aggccctcct	cgtccttgag	cgcgctgccc	23058
cggtgcagcg	cgtgcaccgt	cgccgggaag	ccgctgccc	ccaggatcat	ccggttgagc	23118
agggcattga	cggtcagctg	agccataacc	tcgccggcgc	tgtagcggcg	ggcgaccgag	23178
atgatccccg	cgaccttggt	gtcagcggc	cggtcgaagc	gcagataacc	gactccggca	23238
cgctcgatga	aggctctgat	gaggctggcc	gtgccgaatc	cgtgcacggg	cgccgcgaag	23298
atgatcccg	ccgccgcgac	catcttcgcc	acgacctcgg	gcaccccgtc	ggccagggtg	23358
caggccaccg	gcctgtcggt	gcagtccccg	caggggccgc	accgctccat	cctgatcgag	23418

cgaggtcga	cgccctcga	gtcgacgccg	cggttctctg	ctacgcgtgc	cgctgccgc	23478
agtacgtcgg	cggtgttgcc	gtcacgttcc	gaaccgttga	tcgcgaggat	cttgagttgt	23538
gcgctcacga	ggggcctcct	tggtgagtca	ggtgcgctcg	gcggtcggct	cgggggaact	23598
gtctggccgc	cgctggtccg	ggagccgcag	ggccggctcg	gcgggggcgg	gaggaagacc	23658
gccccgcggc	gggcccac	gctcgccga	ccggatgagg	ggcttctcga	cgagatagaa	23718
gctgatggtc	gccagcacga	cgctgatcga	gatcgtgaag	aggaacagtt	cccagaacct	23778
catgtcacc	cggaattccg	gcgttggcac	gggagacttg	ccgaagatgc	tgccgttctt	23838
gagccagagg	ttgatcacga	tctcgtgcca	gaggtagacg	ccgagggaga	tctggccgag	23898
gaagaggatc	ggcttgctgg	tgaagagcgc	gtccgagaac	cgggactcgg	cgccggggac	23958
cgatcatcgg	gccaggagca	gcagggtgaa	ggaggtcagg	atgaagtgg	cgacgagctc	24018
ctggggccagg	gccgcgttgt	cgcccatgcc	cgggatgccg	atgggcttgg	tggcgtagag	24078
gaggtacagc	gggatgagcg	ggaccagca	gatcagcggg	cgccgatca	cgaaacggta	24138
gaagcccggg	gtccctggcg	tcgcctcggc	gtacgcggag	tagatggcca	gtgccatgcc	24198
cgcggcgaag	cagccggcgt	agtagggcgg	ccagtaccac	tgcacgtcgc	cgccggtgga	24258
ggggaggttg	gtgtacgtga	cccagccgat	ggccatgact	tccagcgcgg	ccagcggcag	24318
caggaggcgg	cgtgccttct	gcccgggagt	gctgccgccc	cgcgcgagcc	ggtggccgat	24378
ccaggcgatc	agcggcaggg	cgaggtagaa	cgtgaactcg	gcggggaccg	tccaggtggg	24438
ctcgatgccg	tgcatcggct	ggccctcggg	cagatagaag	tgcatgagca	gcacggggccg	24498
caggacgtcg	ctgacgtgt	cgatctcgaa	ccagttgtag	ccggggattg	cgaagacgag	24558
caacaggtag	taggcgggca	ggatgcgcag	ggccggcgt	ttgaggaacc	gtccggtggc	24618
gggcccgttc	gtccactga	tggtgacgcg	ggcgtagggc	ttgtacagca	tcattccgga	24678
cagagcgaag	aagggggaag	gcatacccc	agaccgtccg	cgaggacgcc	ccagaacgg	24738
ttgcccggct	caccgacga	gctgcccact	ccggcctgga	aggcgacgtg	gtagacgacc	24798
acaccagcg	cgaggacacc	tcgcagtccc	tcgaacttcg	gtattcgctt	gctttttg	24858
ccacctgcgt	cgcaaggac	gtcccccattg	gaacagtccc	ctttcccttg	gcacttgctc	24918
gttgacttcc	cgaaatagtc	gggtctgcgg	agtgtgagcc	gcacatccaa	tcgtgctggt	24978
ccggtgctca	ggacgacttg	tttcggcctg	agtgggaagg	cagccacccc	cgccgccccg	25038
cctcggccag	accggggggc	gaggagtccc	gttccgagag	gatcggagtg	atctccggcg	25098

gccaggcgat	gcccacctcc	ggatccagcg	gattcaagcc	atgttcgagc	cggggggtcgt	25158
aggccgccga	gcacaggtag	acgatcaccg	cctcgtcgct	cagcgtgagg	aatccgaagc	25218
ccagccccgc	ggagacgtac	agcgcccgtc	cgtttctctc	gccgagctcc	acgggtccgcc	25278
agccgccgaa	ggtggggcgac	cccacccgga	tgtcgaccac	ggcgccgaac	acgctgccgc	25338
gcaggcagct	gaagtacttg	gcctggccgg	gtacgcccc	ggcgaagtgg	atgccccgca	25398
gcaccccgctg	ggaggagatc	gcgcagttcg	cctgccgcag	gtcgaaggag	tggcctacgg	25458
tgcggcgga	gggctcgccc	tggaaccact	cgcgaaacga	gccccgttcg	tcacggaaga	25518
cctgcttctc	ctcgtccac	gctcccgaga	tcccgatcgg	cttcacgct	ggcccccttct	25578
ctcgacttct	ctcgacgact	cgcgggaggc	ggccgagggg	tccgccgggc	ccgtgggaac	25638
gccgcagtct	agatgcggcg	gcaccggggg	caggggggtg	cggacgacgt	ccgccccacc	25698
tcagcacacc	gggagatgca	ggtcggtgac	gggcgacgtg	acgatgcaac	ggtccgaggc	25758
ccggttgccc	ggacgacggc	ccacagagcc	atcggagcaa	cggaggcgga	ccgcagatga	25818
ccaagcacgc	ccgtgaccgc	gcggtagtcc	tcggcgcagg	gatggcgggg	ctgctcgccg	25878
cgcgcgtcct	gtccgagacg	tacaaggaag	tgctggtgat	cgaccgggac	cggttggggc	25938
gcacggagca	gcgccgcggt	gtcccgcacg	gacgccacgc	ccatgcgctg	ctggccaagg	25998
gacagcagat	cctcaacgaa	ctcttccccg	gactcgacac	cgaactcacc	tcggccggaa	26058
tccccgccgg	ggacatcgcc	gggaacctgc	ggtggtactt	caacggccgc	cggctccagc	26118
ccttcgacac	cgggctgac	agcgtctcgg	cgacgaggcc	cgagctggag	tcccacgtgc	26178
gcgcacgggt	cgccgcgctg	ccacaggtga	agatcatgga	cgggtgcgtg	atccggggcc	26238
tgaccgcctc	ggccgaccgc	agccgcgtca	ccggtgtcga	ggtggtcgac	gagtcgggta	26298
cggacacccc	gacgcgcctg	gaggccgacc	tcgtcgtcga	cgtcacgggg	cgcggtctgc	26358
ggactccccgc	ctggctggag	gagttcggat	acgagcggcc	cgcgaggagc	cgcttcaaga	26418
tcgatctggc	gtacaccacg	cgccacttca	agctcaagga	agaccctac	ggcacggacc	26478
tgtcgatcaa	cccggtgga	tcgccgagca	accgcgcgg	cgcgttcttc	ccccggctcg	26538
cggacggcag	ctcccagctc	tccctcaccg	gaatcctcgg	cgaccacccg	cccaccgacg	26598
acgagggctt	cctggcgctt	gccaagtcgc	ttgccgcgcc	ggagatctac	cgggccgtcc	26658
gcgatgccga	acctctcgac	gaaccgggtca	ccttcgcgtt	cccggcgagc	gtccgccgcc	26718
gttacgagag	gctgcgccgt	ttccccggcg	ggttcctcgt	catgggcgac	ggcgtgtgca	26778
gcttcaaccc	cgtctacggc	cagggcatga	cggtcgccgc	cctggaggcc	gtggcgctgc	26838

gggaccactt	gcgcgacgcc	ccggaccccc	acgccctgcg	cttcttccgg	cgtatctcca	26898
cggtcacga	cgttccgtgg	gacatcgccg	ccggagcgga	tctgaacttc	cccgggggtgg	26958
agggccccc	caccatgaag	gtgaagatgg	ccaacgccta	catggcccgc	ctgcacgcag	27018
cggcagccgt	cgacggcgcg	gtgaccgggg	cgttcttccg	ggtggccggg	ctggtggacc	27078
ccccgcaggc	cctgatgcgc	ccctccctcg	ccctgcgggt	catgcgcaac	tcctcggcga	27138
agccgtcgg	cccttcgggc	gccgccgtat	gaccgcgcgg	cccgtccggg	gcggctgccg	27198
gggccaggag	ccgacatgcg	ggtgatgatc	acggtgttcc	cggcgcgggc	gcacttcctg	27258
ccgctggtgc	cctatgcctg	ggccctgcag	agcgcgggcc	acgaggtatg	tgtcgtggcg	27318
cccccgggct	atcccaccgg	ggtggccgac	cccgaacttc	acgaggccgt	caccgcggcc	27378
ggcctgaagt	cggtgacctg	cgggcagccg	cagccgctgg	cggtccacga	ccgcgacgac	27438
cccggctacg	cggcgatgct	gccgaccgcg	gcggagtcgg	agcgctacgt	ggcggccctc	27498
gggatcagcg	agaaggagcg	ccccacctgg	gacgtcttct	accacttcac	cttgctggcg	27558
atccgcgact	accatccgcc	gcggccgcgg	caggacgtgg	accaggtgat	cgagttcgcc	27618
cggatctggc	agcccgatct	ggtgctgtgg	gacgcctggt	tcccctcggg	cgcgatcgcg	27678
gcgcgggtca	gcggcgccgc	gcacgcgcgg	gtgctcgtag	cccccgacta	caccggctgg	27738
gtcaccgagc	ggttcgccgc	cgcgggcccc	gcggcggggg	ccgacctcct	ggccgagacg	27798
atgcggccgc	tggccgagcg	gtacggcggtg	gaggtcgacg	acgatcttct	gctcggacag	27858
tggacgggtca	atccgttccc	ggcgccgatg	aaccgcgccga	cccggctcac	gaacgttccg	27918
gtgcgctacg	tgccctacac	cggtgccagc	gtcatgcccg	cgtggctgta	cgcgcgggccg	27978
tcgcggccgc	gggtggcgct	gtcgctcgga	gtgtccgcgc	gggcgttcct	caagggtgac	28038
tgggggcgta	ccgccaaact	gctggaagcg	gtcgcggagc	tggacatcga	ggtgatcgcc	28098
acgctcaacg	acaaccaact	ggcggagagc	gggcgcgtgc	cggacaacgt	ccacaccctc	28158
gactacgtac	cgctcgacca	gttgctgccc	acctgctcgg	ccgtcatcca	ccacggatcg	28218
acgggcacct	tcgccgcggc	gagcgcgggc	gggctgcccc	aggtggtctg	cgacaccgac	28278
gagccccctc	tgctcttcgg	cgaggacacc	cccgcggca	tcgcgtggga	cttcacctgc	28338
cagaagcagc	tcaccgcgac	gctcacctcc	cgcggtgtca	ccgactacgg	ggcgggggtg	28398
cgcgtcgacc	accagaagca	gtccgcggga	cagatccgtg	agcaactacg	cagggtgctc	28458
accgaacctt	ccttcgcgca	gggcgctcga	cggatccggg	aagaccggaa	ttccgcccc	28518

agccccggctcg	aactcgtatc	gctcctggta	gaactgacga	agcgtcatcg	ccgtgacaag	28578
gaggcgacc	gatgaggatg	ctggtgacgg	gcggagcggg	tttcatcggc	tcgcagttcg	28638
tgccggccac	actgcacggc	gagctgccgg	gttccgagga	cgccccgggtg	acggctcctgg	28698
acaagctgac	gtactccggc	aatccggcca	acctcacctc	cgtcgcggcc	catccgcggt	28758
acaccttcgt	ccagggcgac	accgtcgacc	cgcgcgctcg	cgacgaggtg	gtcgccggcc	28818
acgacgtcat	cgccacttc	gcggcgaggt	cgcacgtgga	ccgctcgatc	gacaccgcca	28878
cccggttcgt	cacgaccaac	gtgctcggga	cccagacgct	gctggaagcg	gctctccggc	28938
acgggggtcgg	ccggttcgtg	cacgtgtcga	ccgacgaggt	ctacgggtcg	atcgctcctcg	28998
gctcatggac	cgaggacacc	ccgctcgccc	ccaacgtccc	ctacgcggcg	tcgaaggcgg	29058
gttcggacct	gatggcgctc	gcctggcacc	gcacccgggg	cctggacgtc	gtcgctcacc	29118
ggtgcaccaa	caactacggt	ccctaccagt	accccagaaa	ggtgatcccg	ctcttcgtca	29178
ccaacatcct	cgacggcttg	cgggtgcccc	tgtacgggga	cggcgcccac	cgccgggact	29238
ggctgcacgt	gtccgaccac	tgccggggcca	tccagatggt	catgaactcc	ggccggggccg	29298
gggaggtcta	ccacatcggc	ggcggcaccg	aactctccaa	cgaggaactc	accggcctgt	29358
tgctcacggc	gtgcggcacc	gactggctct	gcgtggaccg	ggtggccgac	cggcaggggc	29418
acgaccgccg	ctactcgctc	gacatcacga	agatccggca	ggaactgggc	tacgagcccc	29478
tggtcgctt	cgaggacggc	ctggcccgga	cggtgaagtg	gtaccacgag	aaccgttcgt	29538
ggtggcagcc	gctgaaggaa	gcggccggcc	tcttgacgc	cgtcggctga	cggcagccac	29598
cgctaggaac	accccaggaa	aggagccacc	tccgtgacag	cagtcaagga	gccgacgtcc	29658
cgcgaggac	ggcgggagtg	gacgctctc	gtcgctctct	ccttgcccac	gatgctgttg	29718
atgctggaca	tcaacgtcct	catgctggcc	ttgccgcagt	tgagcgagga	tctcggcgcg	29778
agcagcacgc	aacagctgtg	gatcaccgac	atctacggat	tcgcgatcgc	cggttctctg	29838
gtgaccatgg	gcacctcgg	cgaccggatc	ggccgcgcga	ggctcctgct	cgggggcgcg	29898
gccgtcttcg	cggtcgtgtc	cgtcgtcgcc	gcgttctccg	acagcgcggc	gatgctcgtc	29958
gtcagcccg	ccgtgctcgg	cgtcgcgggg	gccacggtga	tgccctcgac	gctcgcgctc	30018
atcagcaaca	tggtcgagga	ccccaaaggag	cggggcaccg	ccatcgccat	gtgggcgagc	30078
gccatgatgg	ccggagtcgc	cctcggggccc	gccgtcggcg	gcctggctct	cgccgcgttc	30138
tggtggggat	cggtgttctt	catcgccggt	ccggtgatgc	tgctgggtgg	ggtcaccggc	30198

cccgtgctgc tcaccgagtc ccgcgacccg gacgccggac ggctggacct gctgagcgcg 30258
 gggctctccc tcgcgaccgt gctgccgggtg atctacggac tgaaggagct ggcccggacc 30318
 ggggtgggacc cgctcgccgc cggcgcggtg gtcctcggcg tgatcttcgg cgcgctgttc 30378
 gtccagcgcc agcggcggtt ggccgacccc atgctggacc tcggcctctt cgccgaccgc 30438
 accctgcggg cgggtctgac ggtcagtctg gtcaacgccg tcatcatggg cgggaccgga 30498
 ctgatggtcg ccctgtacct ccagacgac gccggtcact ccccgttggc cgccgggctg 30558
 tggctgctga tcccggcctg catgctcgtc gtgggcgtac agctgtcgaa cctgctggcc 30618
 cagcggatgc ccccttcccg ggtgctgctg gggggactgc tgatcgcggc cgtcggacag 30678
 ctctgatca ccaggtgga caccgaggac accgccctcc tcatcgcggc caccacctg 30738
 atctacttcg gcgcctcacc ggtggggccg atcaccacgg gcgcgatcat gggagccgcg 30798
 cccccggaga aggcgggtgc cgctcgctcg ctgtccgcca ccggcggcga gttcggagtg 30858
 gcgctcggca tcgcgggcct ggggagtctg ggcaccgtcg tgtacagcgc cggggtcgag 30918
 gtgccggacg cggccgggccc cgccgacgcc gacgccgcgc aggagagcat cgccggcgcc 30978
 ctgcacacgg ccggtcagct ggcaccgggc agcgccgacg ccctgctgga ctccgcgcgc 31038
 gcggccttca ccagcggcgt gcagtcgctc gccgccgtct gcgccgtgtt ctccctggcg 31098
 ctgcgccgtc tcatcggcac ccggctgcgg gacatttccg cgatggacca cgggcacggc 31158
 gaggaaccgg ccgagaacga cgctcaaccg gccacatgag cgcacttccg gagatgcaac 31218
 ggccgcgctc gaggtatgag gatcaccttc cggggtgcac ctgcacggca acggaggcgt 31278
 agtggagtac tggaacagca cggcggagac catgccccgc caggaactcg aacagtggaa 31338
 gtggcgcagg ctccaggccg ccatggacca cgccagaagg ctttcgccct tctggcggga 31398
 acgactcccc gagaacatca cctccatggc ggactacgcg gcgcgggtgc ctctcctgcg 31458
 caaggccgac ctctcgccg cggaagccgc gtctccccct tacggcacct ggccctcgct 31518
 ggatccggcg ctcgagtgcc gccatcacca gaccagcggc accagcggta accccccat 31578
 ccggacgttc gacaccgaac gcgactgggc ctggtgcgtg gacacgttct gcacggcgct 31638
 ccacagcatg ggcgtgcgcc cgcaccacaa gggctctggtg gcgttcggct acgggctgtt 31698
 cgccggtttc tggggcatgc actacggcct cgagcgcatg ggcgccacgg tcatcccggc 31758
 cggcggcctc gactcccgt cccgggtacg gctgctggtc gactaccaga tcgaggtgct 31818
 cggcctcaca ccgagctatg cgatgcggct gatcgagacg gcccgcgaga tgggcatcga 31878

cctcgccccg	gaggctaacg	tccagatcat	cctggccggg	gcgagagccg	gctccgcgtt	31938
caccacccgc	accatcgagg	aggccttcgg	cgcccgggtc	ttcaacgccg	cgggcaccac	31998
tgagttcggg	ggggtgttca	tgttcgagtg	caccgcccgg	cgcgaggcct	gccacatcat	32058
cgaaccctcg	tgcacgagg	aggtgctcga	cccggtgacg	gaacagcccc	tcggctacgg	32118
cgaggagggc	gtccgagtca	ccaccgggct	gaaccgtgag	gggatgcagc	tcttcgggca	32178
ctggaccgag	gacgtcgtgg	tcaagcggcc	ccacaccgag	tgcggtgcg	gccggacgtg	32238
ggacttctac	gacggcggca	tccttcggcg	cgtggacgac	atgcgcaaga	tacgcggggg	32298
ctcgatcacc	ccggtgatga	tcgaggatgt	gctgcgcggc	ttcgacgagg	tgaacgagtt	32358
ccactcgtcc	atccggaccg	tccgcggact	cgatacgatc	cacgtcaagg	tcgaggcggg	32418
agacatctcg	ggtgaggcgg	ccgagagcct	gtgcggccgc	atcaccgagg	agttcaagcg	32478
tgagataggc	atacgcccc	aggtggagct	gacccccgcg	ggcagcctcc	cccgatcgaa	32538
gtggaaggcg	gcacgacttc	atgacgagcg	cgaactcgcc	cctcaggcct	gagcaggtgg	32598
agcagctcct	ggtgagctac	cggagcctgg	gcctgctgga	gcagagctgc	gcgggtcccgg	32658
ccgtgctcgc	cgcggtcagg	gccgcccgtg	cggaactccg	tatcgccctg	gacgggcagg	32718
gcgtggagtt	cgagtactac	cgggggcacg	acgacagcct	cgtggcctga	acccaccccc	32778
ggtccgccgg	gtcagacgaa	agggagaccg	gtgccccacg	gtgcagagcg	cgaagcgagc	32838
ccggccgagg	agagcgccgg	caccgcggcc	ctgaccggcg	aggagtatct	ggagagcctg	32898
cgggacgcgc	gggaggtgta	cctcgacggc	agccgcgtca	aggacgtcac	cgcgcatccc	32958
gcgttccaca	acccggcccc	gatgacggcc	cggtgtgtac	acagcctgca	cgacccccgc	33018
cagaaagcgg	tcctgacggc	gccaccgat	gccggtgacg	gtttcaccca	ccgcttcttc	33078
accgcaccgc	gcagcgtcga	cgacctggtc	aaggaccagg	ccgccatcgc	atcctggggc	33138
cgcaagagct	acggctggat	ggggcgcagc	cccgactaca	aggcgtcggt	cctcggcacg	33198
ctggggggcca	acgccgactt	ctacgagccc	ttcgcggaca	acgcccgggc	ctggtaccgg	33258
gagtcgcagg	agaaggtgct	gtactggaac	catgccttcc	ttcaccgcgc	ggtcgaccgc	33318
tcgctgcccc	ccgacgaggt	gggcgacgtc	ttcatccacg	tcgagcgggg	gaccgacgcg	33378
ggcctggtgg	tgagcggggc	caaggtcgtc	gcgaccggat	cggccctcac	ccacgcggcg	33438
ttcatctcgc	actggggact	tcccatcaag	gaccggaagt	tcgccctggt	ggccaccgtg	33498
ccgatggacg	cggacggcct	caaggtgata	tgccgtccct	cctactccgc	aaacgcggcg	33558
accacgggca	gcccgttcga	caaccgcgtg	tcctcacggc	tgagcagaga	cgacgccatc	33618

ctcgtactcg	accaggtgct	gatcccctgg	gagaacgtgt	tcgtctacgg	caacctgggc	33678
aaggtacatc	tcctcgccgg	acagtcgggg	atgatcgaac	gcgccacctt	ccacgggtgc	33738
acccggctcg	ccgtgaagct	ggagttcatc	gccgggctgc	tggccaaggc	gctggacatc	33798
accggggcga	aggacttccg	cggtgtgcag	acccggctcg	gagaagtcct	ggcctggcgc	33858
aacctcttct	ggtcactgtc	ggacgcggcg	gcccgcgaacc	ccgtcccctg	gaagaacggc	33918
acgctcctgc	ccaaccctca	ggcgggtatg	gcctaccgct	ggttcatgca	gatcgggtac	33978
ccgcggtcc	tggagatcgt	ccaacaggac	gtggccagcg	gcctcatgta	cgtcaactcc	34038
tccacggagg	acttccgcaa	ccccgagacc	ggcccctact	tggagaagta	cctccggggc	34098
agcgacggcg	caggcgccgt	cgagcgtgtc	aaggtgatga	agctgctgtg	ggacgcgggtg	34158
ggatccgact	tcggcgggccg	gcacgaactc	tacgagcgga	actactccgg	gaaccacgag	34218
aacacccgga	tcgagttgct	gctgtcgcag	acggcgagcg	gcaaactgga	ctcgtacatg	34278
gacttcgccc	aggcatgcat	ggacgagtac	gacctggacg	gctggaccgc	tcccgacctg	34338
gagtcgtttc	acgcgatgcg	ttccgcctcc	cgcgaccttc	tcggagggct	gtagttcccc	34398
gacggtgtac	tgcgggcccc	gatccggggg	ccgcagtaca	ccgtcggggc	ggctggtgct	34458
cagccgcgca	ggaatccgat	gagctcgggg	gcgagcttct	tgggcgccat	ggcgacggca	34518
ccgtggttga	gcccgttcag	ggtgcgggtg	ctcgcgtcgg	ggaggactcc	ggtgagttcc	34578
ttcgcggcac	gctggaaacc	gtcggggctc	ttggaaccgg	tcagcaccag	ggtcggggcc	34638
gacgccgcgg	accacggctc	ggcggggagc	ggcttgccct	gctgggtgtc	gcccatacc	34698
gcgatgtcgt	agggaagcgt	gttggccaga	cccttgaggt	tggaccagac	accgggcatac	34758
aggcgcatgg	cgccgaccat	gaaggagggc	atgccctgtg	ccttgaccat	gaaggccttg	34818
accgcgtcgc	tgcgtcggtc	ctccgccaga	aggctgtcga	tctgaccgcc	gaagccggcg	34878
ggcggggcga	agccgtccga	ggtgacggag	aacggcggct	cgtagaccgc	gagcttgttc	34938
accttcaggc	cggcggcggc	ggctcgcagg	gcgagcaccg	cgccggaaga	gctgccgaac	34998
agggaggccg	aaccgccgac	ctggtcgatc	agcgccgcga	tgtcctcgat	ctcgcgctcg	35058
accgcgtacg	ccggaccgtc	ggcgtggcg	ccgcggcccc	gacggtcgta	gttgacgacc	35118
gtgaagtgtc	cggcgaggag	accggcgagc	ttcttggcgt	cggagcggtc	ggccaaggcg	35178
gaggccacca	ggatcacccg	cggcccctcg	cccgaacttg	cgaaggcgat	cgtggtgccg	35238
tcggccgata	ccgtcgttga	ttccaccttg	gctgctttct	cacgggttga	agacatagct	35298

tccctcagat	cacattgtgg	ggcgtgctgc	cgacagtgga	gaccggcgtc	cggaggaaaa	35358
gtaatcggtc	ctgccagaat	tgggggttcc	ggagggcacg	ccgaccgctg	cacgacggcg	35418
cgccccgacc	ttccggacat	tgtcgtgccc	tcagatgtgt	ttcgcattctt	caggagtgtc	35478
cagtgatccg	tgaggtgaga	aagggacggg	ggtcgggtca	gtcgttgccg	cgcgggctgt	35538
tctggtaagc	ggccagacgc	cactgcccgt	cctgttcgac	ggccagccag	gaggcccgga	35598
cggcgccgtc	gccgctcgcc	tcggtctccc	ccggggcgag	gatgccgccc	tcggtgatga	35658
gcagggcgat	gccgtcgccg	agcaggcgcg	cgtcgatggg	gctgccgatg	acacgggtgc	35718
ccttgtagcg	gcccgcgaag	gcgggcgcca	tgtgggtgcg	gatgttctcg	cggcccttgc	35778
ggaagaggcc	ggggaggatc	atcgtcccgt	cctcgggcaa	gacgtcgggc	aaccggtcgg	35838
cgtcgtggtc	ggcccaggcg	gccacgatgc	gcgcccgcag	agcggctacc	gctgccaggg	35898
cggcgctcggg	agcggaggtg	gtcgagtcgg	tgctgggtcat	atcgcggttc	ccgtccgttg	35958
gttggcggtt	tcggcacggc	ccgcagccct	gcccagagccc	gacgctggca	ggcgggccccg	36018
tcatacaggca	tctcctgcgt	tgcgccccac	gccagtcact	tcacggccag	aacaagtgcg	36078
gcattctgga	agaagctgag	gcccgcgacc	cgggtgcgacg	atctgcggtg	tcacggagtt	36138
cgcacacggt	tacgcacgga	ggctcgatgc	ccgctgtcaa	tggatcggtg	cagtcaggcc	36198
agtcgcaccg	acgctccgtc	gtggcgacgg	tggtgggcaa	cttcgtggag	tcgttcgact	36258
ggctcgcta	cgggctcttc	gtcctctctt	tcgcggtca	gttcttcccc	tcgtccaacc	36318
agttcacctc	cctgctcggc	gcgttcgagg	tcttcggcac	gggcatgctc	ttccggccga	36378
tcggcggggt	cctgctgggc	cgctcgcgcg	accggcgagg	ccggcgcccc	gccctgatgc	36438
tggcgatcgg	actgatgacc	ggcggctcga	ccctgatcgc	cgtcgtcccc	acctacgagc	36498
acatcgggat	cctcgccccg	ctgcttctgc	tgctcgcccc	gctcgcccag	ggagtctcct	36558
cgggcgggga	atggacagcg	gcggccacct	acctgatgga	gatcgcgccg	aagaaccgcc	36618
ggtgcctcta	cagcagcctc	ttctccgtga	cgaccatggc	gggccccctc	gtcgcacgcg	36678
tgctggggcg	gggcctcggc	gtgtgggtgg	gaaccgcgac	gatggaggcc	tggggctggc	36738
gggtgccgtt	cctcctcggc	ggcgtcttcg	gcgtgatcct	gctgttctctg	cgccgtcggc	36798
tcaccgagac	cgaggtcttc	cgccgggagg	tgcgggccccg	ggcccggcgc	ggctcactgg	36858
gccagctgat	cggagccac	cgccccagg	tgctgctggc	cgtgatgctg	gtggccggac	36918
tgggcgtcat	cggcggaacg	tggtcgaccg	cggtcccggc	gatggggcac	cgtctgatcg	36978

gctcgcagac	gatgtttctgg	gtgggtgggtct	gtgtgaccgg	ctcgggtcatc	ctgctgcagg	37038
tacccatagg	gctgctcgcc	gaccgggtgg	aaccgggcag	gttcctgatc	gtctccagcg	37098
tcgtcttcgc	cgctgtgggc	tcgtacgcct	acctcacgt	ccaggactcc	ttcgcgagcc	37158
tggcgttcac	gtacagcacc	ggagtgatct	tcctcggctg	cgtcaccatg	gtgctgccga	37218
agatgctctc	cagaatcttc	cctccgcaga	tacgcggcct	gggcatcggg	ctgccgcacg	37278
cctcgaccac	cgactcctc	ggcggggcgg	ggccactgct	ggccgcctac	tccgacgagc	37338
gaggcgcctc	gggctggttc	atcgccgccg	tgatggccgc	ggtcctgctc	gcctggccgg	37398
ccaccctgtg	ggagcgacgg	ctgttcgcg	cccggacggc	cccgggaagc	gagccggttc	37458
ccgaatccgc	cgtcgcccgc	cccgtcgggt	gaccgtccgc	acttctgcat	cccgtccggc	37518
accgagcgcc	ggcgaccttc	ccgactgaga	ggttgacatc	atgacgacgt	ccgacaccac	37578
cgaccgggtcc	caggacggcg	tgccgccgct	ctccttcac	caggagtcc	tgtgcatggt	37638
cgacagcggg	aacgacggcg	ccgacgtggg	gccgttcggc	cccatgtacc	acatcgtcgg	37698
agcctggcgg	ctgaccggcg	ggatcgacga	ggagaccctg	cgcgaggcgc	tgggtgacgt	37758
cgtcgtgcmc	cacgaggccc	tgcgcacatc	gctggtccgc	gaaggtggca	cgcaccggcc	37818
ggagatcctg	cctgcggggc	ccgccgcgct	ggaggtccgt	gatctcggcg	acgtcgacga	37878
gtcggagcgg	gtgcggcgcg	gtgaggaact	gctcaacgag	gtggagtcca	ccggtctgag	37938
cgtgcgggag	ctgccccctgc	tgcgggccgt	gctcggacgc	ttcgaccaga	aggacgcggt	37998
gctggctcctc	atcgcccacc	acaccgccgc	ggacgcctgg	gccatgcacg	tcatcgcccg	38058
cgacctgctc	aacctgtacg	ccgccaggcg	cggaacccg	gttccccgc	tccccgagcc	38118
ggcccagcat	gccgagttcg	cccgtggga	gcgcgaggcg	gccgaggcac	cgcgggctgc	38178
ggtctcgaag	gaattctggc	gcaagcgcct	ccagggcgcg	cggatcatcg	ggctggagac	38238
ggacataccg	cgctcggcgg	ggctgcccaa	gggcaccgcg	tggcagcgct	tcgccgtacg	38298
cggggaactg	gccgacgccg	tgggtggagtt	ctcacgggcc	gccaagtgct	ccccgttcat	38358
gaccatgttc	gccgcctacc	aggtgctgct	gcaccgcagg	acgggcgagc	tggacatcac	38418
cgtgccgacc	ttctccgggg	ggcgcaacaa	ctcgcggttc	gaggacaccg	tcggttcctt	38478
catcaacttc	ctgccgctgc	gtaccgacct	ctcgggatgc	gcatccttcc	gcgaggctgt	38538
gctgcgcacc	cgcaccacct	gcccagagggc	gttcacccac	gagctgccct	tctcccggtc	38598
gatcccggag	gtgccggagc	tgatggcgct	ggcggcctcc	gacaaccacc	agatctccgt	38658

ctccagggc gtgcacgcgc ccgcgtccga ggggcccag caggccgggg acctgacgta 38718
 ctcaagatc tgggagcggc agctgtcgca ggcggagggc tccgacatcc ccgacgggg 38778
 gctgtggtcg atccacatcg acccctcggg ctccatggcc ggcagcctcg ggtacaacac 38838
 caaccgcttc aaggacgaga cgatggcggc cttcctggcc gactacctcg acgtgctcga 38898
 gaacgcgggtg gcccgggcgg acgccccctt cacctcctga gacagttccg gcggcggcga 38958
 acccgcccga agaaaggaaa gccagtgtcc accgtttccg acacagcggc cggtcctcc 39018
 ctggaggaga aggtcacccg gatctggacg ggtgttctcg gcacgtccgg tgaggaaggc 39078
 gcgacgttca tcgagctcg agggcagtcg gtctcggccg tcgcatcgc cagcgtatc 39138
 caggaggagc tcgacatctg ggtcgacatc ggcgtcctct tcgacgacct ggatctgcct 39198
 accttcatcg cggcgggtcgt ccggacggcc gacgccggcg gcggcgaggg ctccggaacg 39258
 cagtgaact cgccgggcgc cgtctccccg cggcgcccgg ttccacatgg ctgaggcgg 39318
 tcacccggta ccgggtgaac cgcctcagcc atgtgaaacc gggcctggtc agcgcagctg 39378
 gatgtccgtc tcccgggcga tcgcccggag gaactcgccg cgggacagcg cgtcggcgac 39438
 cagctcgatg tcgtcggcca tgtaccggtc gacgccagc gtcggaacca gccggcgcac 39498
 cgcttcgtac gtggccttcg ccgccgggct caagccgtcg aaccggccgg agatgtcgac 39558
 cgctgggcg gcggccaggt actccaccgc gaggatcttg ttgttggtcg acaggacctg 39618
 gcgggcgttg cgggcccaga tcaggcccat gtcaccacg tcctggttgt cgccgttgga 39678
 cgggacgctc tgggtgctgg ccgggccgat cgtccggttc tcggccacca gtgcgggtggc 39738
 cgggtactgg gcgccggcga atccgctgtg cagccccggg tccccggaga cgaggaactc 39798
 cgggaggccg tagctgaggt gccggttcag gaccgggttg atctgccgt cggccaggac 39858
 gccgagctgg gtgagcgca tggtcacgaa gtccatcgcg aacgcgatcg gctgaccgtg 39918
 gaagttcgcc ccgtggaaga tctccttgcc ctcaagaag agcgggttgt cgttggccga 39978
 gttgagctcg atgcgcagct tgtgccgcgc gtggtacaag gtgtcgcgca ccgccccgac 40038
 gacctggggg atggcccga gcgagtaggc cttctgcagg tagatctccg agcgtggac 40098
 gtccttgccg gcctccttgt ccttctggag ttctcggcgc aggtcggcgt gctcgaccgt 40158
 cagtccgctg ccccgcatca gggcccgcat gttggcggcg gtgtcgatct ggccctcgtg 40218
 cgggcgggct atgtcgtgcc cctccgcgag gaaggggctg gtcgatccgc gtaccgcctc 40278
 gatgagcaga gccgtcacga tctcggcctg ctgggcctgc tccagggcc gtccgacgac 40338
 cagggagccc agaccggtca tcccggacgt gccgttgatc agtgcgaggc ctccttgaa 40398

gcgcagttcg agcgggctcga tgccccgctc ggccagcacc tgggcgggtct ccaccggccg	40458
tccgtcgcgc aggacgtagc cctctccgat gaggggtgctc gcgacgtggg agaggggagc	40518
caggtcgcgc ctgccccga gtgacccgat ctcggggatg gccgggggtga tgccctcggt	40578
caggtactgc gcgaggcggt cgaggatgat ggggcgcacc gcgagtggt ccttggcgag	40638
ggtgttcagc cgggcggcga cgatcgcccg cgcctcgctc tcggcgaaca gcggaccgac	40698
tcccgcgctg tggctacgga cgagattggt ctgcagttcg acttccttcg acttgctgac	40758
ctgcatgtag atcatctcgc cgtacccggt ggtcaccccg tagatgggga tgttctgttc	40818
ggcgatccct tcgaagatct cccggctctt ctgggccttc gcgatggatt cggccggtag	40878
gtcgaccgtc gcgcgttctt ccgcgacgcg gcgtacggct tcgacgggtca gggctctgcc	40938
gtcgacggaa accgggacga tctcgggtct gacttgagtc aatgccatca ctccatgggt	40998
agcggccgag gccggtgtac gacaggtcag ggggtgggtt cgtgaggcgc ggctcagcgg	41058
gtgagccggg agcgggtccac cttccccgcg gcgttgccgc gcaggcgtga agtcaggcgg	41118
gtgaagacgg cgggcagtg cagggggccg aactggccgc gcagatggga acgccaggcc	41178
cggatgtccg cgcgcacgtc ctcccggccc tctccttggt gcaccacgta cacggcgagg	41238
cgggtcacca ggccctggcc gttgacgtgg gggaggaccg cgcactccag gaccgagggg	41298
tcacggttca gcgcggcctc gatctcgggt agttccaagc ggttcccgaa cagcttgacc	41358
tggaaagtct tgcgggcccc gaattccagg gctccgtcga accgtaccg gccagatcc	41418
ccggtccggt accaccggtc accgtccggg gcgaggcccg cgagggggcgc gaacagcgcg	41478
ctgtgggtccg ggccgcctc gacggcgaga taaccggcg tcacgtacgg ggagcggatc	41538
accagttcgc cggtgacgcc ggcggggctc ggccgggtcgt ccgcgtccac gacgagtag	41598
tggcggcccg ggagcgggta cccgatccgg gccgggcccc tgaccggccc ggtgatctcg	41658
tgccaggtcg cggcgatcgt ctcggtgggc ccgtagaggt tgatcaggcg ggtccggggc	41718
agggccgcgc gcagtcgctc cacgagttcg ccgggcagcg cctcgcccat caggagcagg	41778
tggcccaggg tgccggggcg atcgccggg tcggaggcgg tgatcactcc caggaggtcc	41838
cgggcgaagc tgggcacggt ctggagatga gtgatccgct cctggacgag ccacggcacc	41898
agcttgctcg ggttcacct gacgcgtcc ggcaccggac acagcgtccc gccggccacg	41958
agcgtcgcga agacctcggc cagcgccggg tcgtgctccg gg	42000

<210> 2

<211> 216
<212> PRT
<213> Artificial

<220>
<223> cDNA

<400> 2

Glu Asp Pro Gly Cys Gly Val Gly Val Thr Asp Glu Gly Gly Val Pro
1 5 10 15

Gly Asp Ala Cys Gly Glu Gly Arg Phe Leu Glu Phe Glu Ala Gly Gly
20 25 30

Glu Asp Asp Val Val Arg Val Glu Asp Leu Arg Val Gly Glu Arg Pro
35 40 45

Arg Ala Gln Pro Leu Gly Gln Val Arg Gly Glu Ala Pro Asp Gly His
50 55 60

Leu Glu Ala Ala Val Val Gly Pro Gly Val Glu Arg Leu Pro Val Arg
65 70 75 80

Phe His Lys Asp Asp Ala Gly Thr Gly Leu Pro Cys Gly Leu Asp Gln
85 90 95

Ser Gly Val Glu Val Val Leu Glu Asp Ala Ala Gly Gly Gly Ala Leu
100 105 110

Phe Gly Glu Leu Pro Arg Ser Pro Ala Pro Gly Pro Val Ala Pro Val
115 120 125

Gly Leu Leu Val Gly Pro Val Asp Glu Val Glu His Val Leu Ala Glu
130 135 140

His Arg His Pro Ala Gly Leu Asp Ile Glu Asp Val Val Pro Gly Val
145 150 155 160

Ala Val Thr Val Ile Gly Asp Ala Gly Arg Ala Val Gly Gly Ala Pro
165 170 175

Leu Gln Glu Asp Asp Phe Gln Arg Ser Ser Arg Glu Met Lys Gln Ala
180 185 190

Tyr Arg Gly Arg Arg Ala Cys Gln Ala Arg Pro Tyr Asp Gln His Pro
195 200 205

Gly Ala Arg Thr Arg His Ala His
210 215